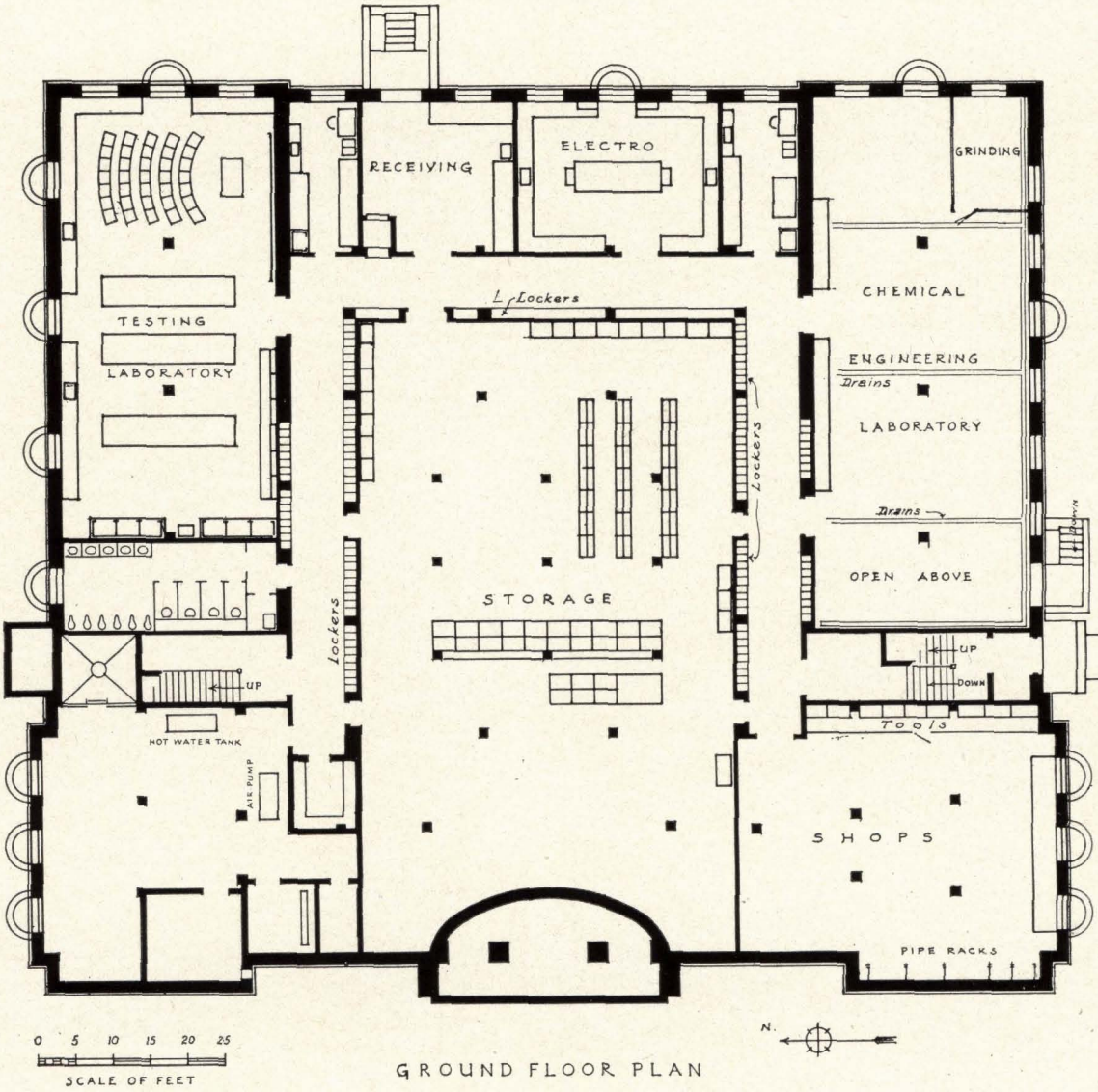
THE UNIVERSITY OF DELAWARE CHEMICAL LABORATORY

ALBERT S. EASTMAN, University of Delaware, Newark, Del.

The new chemical laboratory of the University of Delaware, Newark, Del., the gift of H. Fletcher Brown of Wilmington, was dedicated on October 15 and 16, 1937. The building, which is of colonial design in harmony with the other colonial brick buildings of the unversity, was erected by R. C. Ballinger and Company of Philadelphia



GROUND FLOOR PLAN

in coöperation with Charles Z. Klauder, architect, of Philadelphia, and Robert P. Schoenijahn, engineer, of Wilmington.

The size, shape, and interior arrangement are shown in the three accompanying floor plans. The nearly square building makes possible very economical construction. The building contains 680,000 cubic feet, on which building costs are computed, and cost $346,970 or 51 cents per cubic foot—an extremely low cost which was reached without sacrifice of utility, appearance, or durability. This includes plumbing, heating and ventilating, electrical work, and laboratory tables, but does not include movable furniture, portable laboratory equipment, nor architect's and engineer's fees. In addition $22,000 has been set aside for laboratory equipment, mostly in the chemical engineering laboratory, and for additions to the department library. Shelf room is provided for two thousand books.

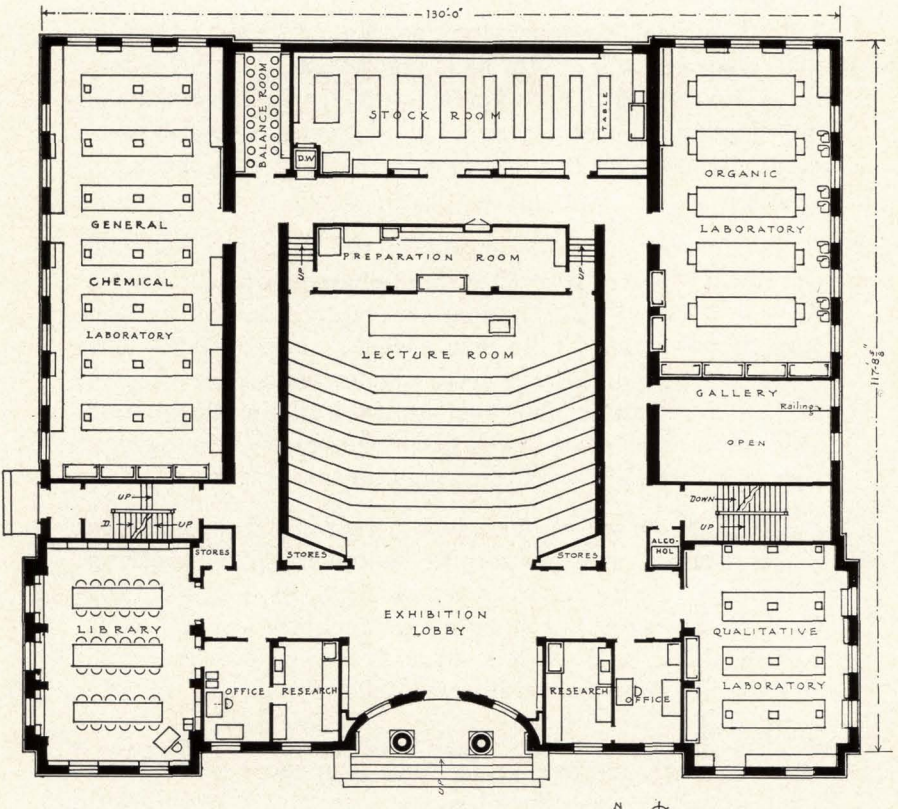
The interior walls, except in the entrance hall and the library, are of 5 × 12 Natco hollow unglazed tile of a light buff color. They have a substantial look and at the same time a very trim and pleasing appearance. The entrance hall and library have plaster walls decorated to match. The hall or lobby has several built-in, illuminated aluminum show cases, with glass shelves, for the exhibition of material of scientific or technical interest.

The floors are of brick in the entrance hall, linoleum in the library, and concrete in the chemical engineering laboratory. In the laboratories, class rooms, and halls the floors have a special hard-finish asphaltum top, about 1 inch thick, applied hot, over the concrete. Acoustic ceilings are used in the library, class rooms, and lecture room.

The building has more than the usual number of service outlets, and the plumbing, heating and ventilating, laboratory furniture, chairs, and fixtures are of the best quality and workmanship obtainable. Every effort

was made to have the laboratory satisfactory in every detail.

The laboratory furniture is of steel, with soapstone desk tops and sinks, and is finished in olive-green to match the steel office furniture. All the shelves, drawers, and lockers in the laboratories and stock rooms have been lined with Sisalkraft tar paper, bent up at the sides and ends to form a shallow, water-proof tray. The bottom of this tray is covered with a sheet of thick gray lining

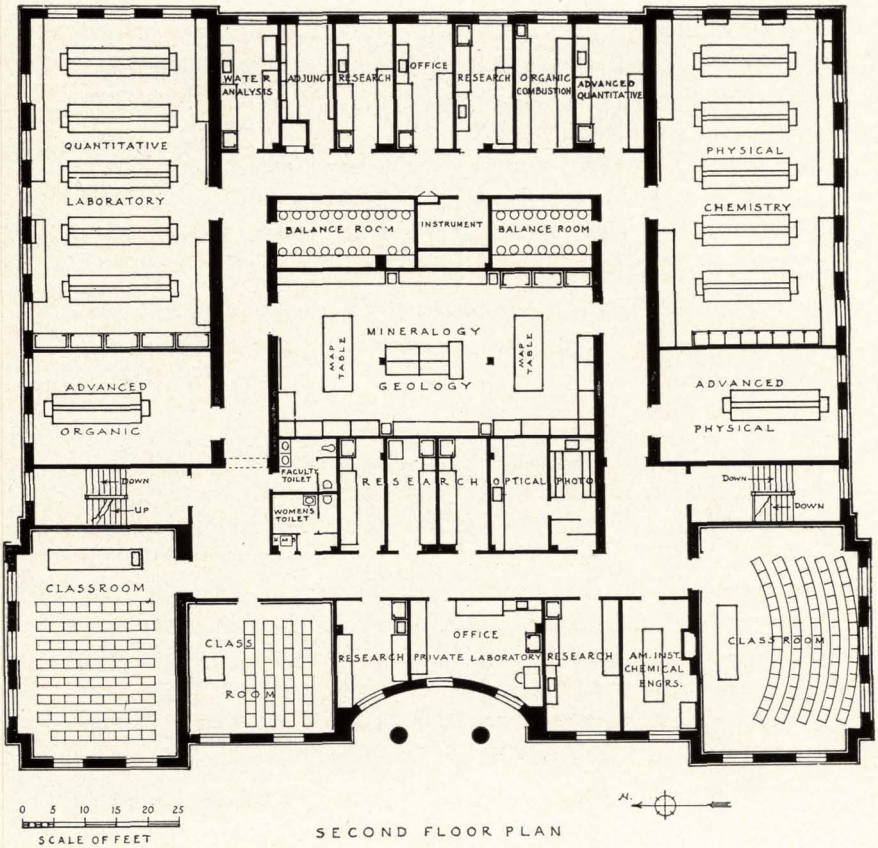


FIRST FLOOR PLAN
CHEMISTRY BUILDING
UNIVERSITY OF DELAWARE

CHAS. Z. KLAUDER
ARCHITECT
PHILADELPHIA

paper, which is absorbent and may be easily replaced. The tar paper may be purchased of any dealer in roofing paper, and the lining paper of the Eaton-Dikeman Company. The paper linings were suggested by Dr. Foulk of Princeton University.

Each desk in use by students beyond the freshman year has a long drawer for burets and condensers, as well as a pencil tray in each large drawer. The shelf in the cupboard below does not extend all the way to the front,



SECOND FLOOR PLAN

thus providing space for tall bottles and ring stands. All laboratory desks, and the lockers on the ground floor, are provided with master-keyed combination padlocks.

A feature of the building is the large amount of storage available. All the space under the lecture room and lobby is for rough storage, the laboratories are well provided with shelving and cabinets for reagents and apparatus, the preparation room is larger than is usual, and one large centrally located stock room serves the building. The arrangement makes it convenient for one man to look after the stock room, preparation room, and lecture table. There are a call bell and a mail slot at the delivery window.

Both classrooms and laboratories are provided with slate blackboards, set in aluminum frames with aluminum chalk trays. In each case, a 2-foot section is of cork board for use as a bulletin board. Every blackboard has sliding hooks at the top for hanging charts and drawings, and also a strip of cork board, 1-inch wide for use with thumb tacks, set into the top of the frame.

The distilled water system is of aluminum. Streamline copper pipe and solder-type cast-copper fittings with special valves are used on all cold, hot, and circulation water piping.

The chemical engineering laboratory is 71 $\times$ 28 feet with windows on two sides. One end is two stories high, to provide for the two-stage evaporator, distillation column, absorption tower, and other relatively tall equipment. The balcony or gallery is for gravity flow experiments, and a traveling crane is located over the balcony and two-story portion. Numerous outlets for high-pressure steam, air, gas, hot and cold water, electric power, direct current, etc., are located at the columns and in each bay in order to provide flexibility in use.

Two of the offices have private laboratories attached, but twelve other rooms are intended to serve as combination offices and private laboratories. The larger of these

have two laboratory tables, fitted with gas, air, water, steam, suction, alternating and direct current, a hood, office desk, two chairs, bookcase, filing cabinet, and wardrobe.

The building was planned to be run by a staff consisting of two janitors, one mechanic, one stock-room man, and one secretary-librarian. During the one year of use this has proved to be satisfactory.

VENTILATION

The main laboratories and all research rooms are connected to systems of mechanical exhaust ventilation. There are five exhaust systems, each having sheet-lead ducts with separate branches and risers leading from the hoods, and also general exhaust ducts with outlets at both floor and ceiling to remove both heavy and light gases from the room. In general the ducts extend up through the building, within the double partitions of the corridor walls, into the attic space, where they connect to the main horizontal ducts, going to their respective fans. The fans have sheet-lead discharge ducts extending into lead-lined masonry vent chimneys.

There is a down-draft hood on each desk in the general and qualitative laboratories, and all the laboratories, including the private rooms, are provided with hoods, some of the open-front type. The table and wall hoods are fitted with local dampers to control the volume or air removed. The room ducts are fitted with volume-control dampers in the attic at the junction of the main ducts.

Air removed from the main laboratories is supplied in part by the ventilating heater units from outdoors and in part through louvers in the doors to the corridors. This system gives a good draft of air from the corridors into the laboratories, and keeps the corridors free from fumes.

Exhaust Systems. System I serves the main laboratories on the north side of the building with a fan removing 12,000 cubic feet per minute, driven by a 5-horsepower motor.

System II serves the main laboratories on the south side of the building with a fan having an air removal of 9400 cubic feet per minute, and a 5-horsepower motor.

System III serves several small laboratories and the lecture room, with an air removal of 7600 cubic feet per minute, using a 3-horsepower motor.

System IV serves the qualitative laboratory only, with special provision for hydrogen sulfide fumes, having an air removal of 4300 cubic feet per minute with a 2-horsepower motor.

System V serves a number of small rooms with an air removal of 4300 cubic feet per minute, using a 2-horsepower motor.

All these motors are connected to the fans with a V-belt drive, and work against a 1.5-inch resistance pressure.

The total air removal with all systems in operation is about 36,000 cubic feet per minute with a total of 16.5 horsepower for all motors.

The ducts leading from the hoods are 6 per cent antimonial sheet lead with all joints and seams burned. Approximately 30 tons of lead in weights of 3, 4 and 6 pounds per square foot were used. The ducts are partly rectangular and partly circular in form, and are reinforced with heavy band-iron overlaid with lead, all seams being burned. Rigid structural supporting members are essential to prevent sag or distortion of the lead.

All the principal laboratories, the lecture room, and the mineralogy room have special combination heating and ventilating units which deliver warmed out-of-doors air for both warmth and ventilation. These are connected to a dual system of pneumatic temperature control. The small rooms have steam radiators equipped with self-contained temperature-control valves.

All drainage from the sinks, including those in the hoods, is by a separate system made of acid-resisting high-silicon cast-iron pipe for all work above the basement, where connection is made to extra heavy terra cotta acid clay tile, extended to the campus drainage

system. All the joints in the cast-iron lines are made with asbestos gaskets and caulked lead. The tile pipe is made up with hot-poured bitumastic acid-resisting compound.

ELECTRICAL SERVICE

Electrical service for the building is taken from the campus underground distribution system, 2300-volt, 3-phase, 60-cycle. Transformers provide for 120- to 208-volt, 3-phase, 4-wire distribution for light feeders and 208-volt, 3-phase, 3-wire distribution for power requirements. The power and light panels are dead-front, "no-fuse," circuit-breaker type.

The general lighting is by means of ceiling lens-type lighting units in metal boxes, some of which are surface-mounted against the concrete ceilings and some set flush in the hung ceilings.

Direct current is distributed to all the laboratories by a separate system, which includes two 3-kw. motor-generator sets, a storage battery, and special distribution panels of plug-bus cordless type, capable of providing direct current in 2-volt steps from 2 to 24 volts and also at 110 volts.

ELECTRICAL LECTURE ROOM

The lecture room has 270 seats, and is without outside light or ventilation. It has a separate heater unit in the attic delivering about 4000 cubic feet per minute of outdoor air through streamline grilles, to maintain a uniform room temperature. The air exhaust is by gravity through outlets near the floor. In summer the unit may be operated at high speed for general ventilation. The air-intake duct and gravity roof ventilator are fitted with pneumatically controlled dampers which are open when the system is in use and closed at other times to prevent unnecessary loss of heat.

The lights in the lecture room are controlled by Thyratron dimmer equipment, which may be operated either at the lecture table or at the rear of the room.

Special lights over the lecture table and another set of lights to illumniate the blackboard back of the table may be independently controlled. At the lecture table a push button on a flexible cord may be plugged in for the use of a speaker showing lantern slides, to operate a small signal light, which may be plugged in on a flexible cord by the lantern operator. There is also a sound movie installation for 16-mm. film, and a spotlight for special intense illumination of limited areas of the blackboard or lecture table.

The lecture-room floor is sloping and the preparation room is at the lower level. By raising the center section of the blackboard back of the lecture table, apparatus may be passed to and from the preparation room where lecture material is prepared and stored. This room is a fully equipped laboratory as well as store room.

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PROGRAM

FRIDAY, OCTOBER 15

2.00 P. M., Mitchell Hall

CONFERENCE ON CHEMISTRY AND CHEMICAL ENGINEERING

Charles M. A. Stine,
E. I. du Pont de Nemours Company, Presiding

Address: "The Ultra-centrifuge and Its Field of Research"

The Svedberg, Professor of Chemistry,
University of Upsala, Sweden

Discussion:

E. O. Kraemer, Colloid Group Leader,
du Pont Experimental Station
Hugh S. Taylor, Professor of Chemistry,
Princeton University

Address: "Organic Chemistry as Affecting Various Aspects of our Civilization"

Frank C. Whitmore, Dean of the School of Chemistry and Physics, Pennsylvania State College
General Discussion

7.30 P. M., Hotel du Pont

DINNER FOR OFFICIAL DELEGATES

Address: "Chemistry and the Nation's Business"

Harrison E. Howe, Editor,
Industrial and Engineering Chemistry

SATURDAY, OCTOBER 16

9.30 A. M., Lower Campus

DEDICATION OF CHEMICAL LABORATORY

Academic Procession
Ceremonies of Dedication
Conferring of Honorary Degrees

10.30 A. M., Mitchell Hall

CONFERENCE ON CHEMISTRY AND CHEMICAL ENGINEERING

Albert S. Eastman, Professor of Chemistry, Presiding

Address: "Planning for the Future in Chemical Engineering"

Warren K. Lewis, Professor of Chemical Engineering,
Massachusetts Institute of Technology

Discussion:

Albert E. Marshall, Consulting Chemical Engineer
Arthur M. Greene, Jr., Dean of the School of Engineering,
Princeton University

Address: "Chemistry as a Profession"

James F. Norris, Professor of Organic Chemistry,
Massachusetts Institute of Technology

Discussion:

James G. Vail, Vice-President,
Philadelphia Quartz Company

1.30 P. M., Old College

LUNCHEON FOR OFFICIAL DELEGATES

DELEGATES

COLLEGES AND UNIVERSITIES

HARVARD UNIVERSITY, 1636
Howard Warner Starkweather, Ph.D.

YALE UNIVERSITY, 1701
H. Wade Rinehart, Ph.D.

UNIVERSITY OF PENNSYLVANIA, 1740
Norman William Krase, Ph.D., Professor of Chemical Engineering

PRINCETON UNIVERSITY, 1746
Arthur M. Greene, Jr., Eng.D., Dean of the School of Engineering
Hugh Stott Taylor, Sc.D., David B. Jones Professor of Chemistry

WASHINGTON AND LEE UNIVERSITY, 1749
F. S. Johnson, B.S.

COLUMBIA UNIVERSITY, 1754
Victor Kuhn LaMer, Ph.D., Professor of Chemistry

BROWN UNIVERSITY, 1764
Earle Kenneth Strachan, Ph.D., Associate Professor of Chemistry

RUTGERS UNIVERSITY, 1766
W. T. Read, Ph.D., Dean of the School of Chemistry

DARTMOUTH COLLEGE, 1769
Ned Bliss Allen, Ph.D.

HAMPDEN-SIDNEY COLLEGE, 1776
Irvine Cabell Watkins, M.S.

WASHINGTON AND JEFFERSON COLLEGE, 1780
Dunlap J. McAdam, Sc.D.

WASHINGTON COLLEGE, 1782
Kenneth S. Buxton, Ph.D., Head of the Department of Chemistry

DICKINSON COLLEGE, 1783
Ernest A. Vuilleumier, Ph.D., Dean and Professor of Chemistry

FRANKLIN AND MARSHALL, 1787
G. E. Brinton, Ph.B.

UNIVERSITY OF PITTSBURGH, 1787
Frank A. McDermott, M.S.

UNIVERSITY OF NORTH CAROLINA, 1789
O. A. Pickett, B.S.

WILLIAMS COLLEGE, 1793
Clarence F. Brown, B.A.

TUSCULUM COLLEGE, 1794
J. Harrel Shipp, Ph.D.

UNION COLLEGE, 1795
J. A. Barkley, M.A.

MORAVIAN COLLEGE AND THEOLOGICAL SEMINARY, 1807
Roy D. Hassler, M.A., Head of the Department of Chemistry

MOUNT SAINT MARY'S COLLEGE, 1808
George A. Ziegler, M.S., Professor of Chemistry

MIAMI UNIVERSITY, 1809
Winfield W. Heckert, Ph.D.

UNIVERSITY OF MICHIGAN, 1817
Lee Cone Holt, Ph.D.

PENNSLYVANIA MILITARY COLLEGE, 1821
L. P. Wyman, Sc.D., Vice-President and Dean

GEORGE WASHINGTON UNIVERSITY, 1821
J. F. T. Berliner, Ph.D.

PHILADELPHIA COLLEGE OF PHARMACY AND SCIENCE, 1821
J. W. Sturmer, Sc.D.

TRINITY COLLEGE, 1823
Vernon K. Krieble, Ph.D., Professor of Chemistry

KENYON COLLEGE, 1824
James Harrington Boyd, Jr., Sc.D.

RENSSELAER POLYTECHNIC INSTITUTE, 1824
Walter B. Banker, C.E.

MISSISSIPPI COLLEGE, 1826
A. P. Hewlett, Ph.D.

UNIVERSITY OF ALABAMA, 1831
W. K. McCready, M.S.

DENISON UNIVERSITY, 1831
Frank Gilbert Keenen, Ph.D.

NEW YORK UNIVERSITY, 1831
Henry J. Masson, Ph.D., Professor of Chemical Engineering

GETTYSBURG COLLEGE, 1832
Charles M. A. Stine, Sc.D.
John B. Zinn, Ph.D., Head of the Department of Chemistry

LAFAYETTE COLLEGE, 1832
Eugene C. Bingham, Sc.D., Head of the Department of Chemistry

HAVERFORD COLLEGE, 1833
William Buell Meldrum, Ph.D., John Farnum Professor of Chemistry

OBERLIN COLLEGE, 1833
Melvin Adam Dietrich, Ph.D.

MARIETTA COLLEGE, 1835
Howard L. Bender, Ph.D.

DEPAUW UNIVERSITY, 1837
Daniel E. Strain, Ph.D.

KNOX COLLEGE, 1837
Paul Lawrence Salzberg, Ph.D.

UNIVERSITY OF LOUISVILLE, 1837
Thomas M. Davis, B.S.

MARSHALL COLLEGE, 1837
Leslie J. Todd, Ph. D., Professor of Chemistry

MOUNT HOLYOKE COLLEGE, 1837
Esther Loring Richards, Sc.D.

THE CITADEL, THE MILITARY COLLEGE OF SOUTH CAROLINA, 1842
N. F. Smith, Jr., M.S.

WILLAMETTE UNIVERSITY, 1842
George W. Rigby, Ph.D.

UNIVERSITY OF NOTRE DAME DU LAC, 1842
Henry B. Froning, M.A., Head of Departments of Chemistry and Chemical Engineering

VILLANOVA COLLEGE, 1842
Edward Lauth Haenisch, Ph.D., Assistant Professor of Chemistry and Chemical Engineering

WITTENBERG COLLEGE, 1845
M. Channing Wagner, M.A.

BUCKNELL UNIVERSITY, 1846
Charles Samuel Keevil, Sc.D., Professor of Chemical Engineering

GRINNELL COLLEGE, 1846
Ernest B. Benger, Sc.D.

EARLHAM COLLEGE, 1847
Harrison E. Howe, Sc.D.

STATE UNIVERSITY OF IOWA, 1847
W. Otis Teeters, B.S.

COLLEGE OF THE CITY OF NEW YORK, 1847
Herbert R. Moody, Ph.D., Director of the Department of Chemistry

ROCKFORD COLLEGE, 1847
Mrs. Josephine Dengler King, B.S.

HAHNEMANN MEDICAL COLLEGE, 1848
W. A. Pearson, M.D., Dean

UNIVERSITY OF WISCONSIN, 1848
E. O. Kraemer, Ph.D.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, 1850
Marion Fay, Ph.D., Professor of Physiological Chemistry

ST. JOSEPH'S COLLEGE, 1851
Frank A. V. Sullivan, Ph.D., Assistant Professor of Chemistry

TUFTS COLLEGE, 1852
Harry Poole Burden, M.S., Dean of the School of Engineering

ANTIOCH COLLEGE, 1853
William A. Hammond, Ph.D., Chairman of the Department of Chemistry

WESTERN COLLEGE, 1853
Mary L. Caldwell, Ph.D.

BEAVER COLLEGE, 1853
William E. Sturgeon, Ph.D., Chairman of the Department of Chemistry

POLYTECHNIC INSTITUTE OF BROOKLYN, 1854
Raymond Eller Kirk, Ph.D., Head of the Department of Chemistry

PENNSYLVANIA STATE COLLEGE, 1855
Frank S. Pollock, M.S.

ALBRIGHT COLLEGE, 1856
Graham Cook, Ph.D., Head of the Department of Chemistry

BIRMINGHAM-SOUTHERN COLLEGE, 1856
Guy E. Snavely, L.H.D., President

IOWA STATE COLLEGE, 1858
Harold L. Maxwell, Ph.D.

AUGUSTANA COLLEGE AND THEOLOGICAL SEMINARY, 1860
T. L. Johnson, B.A.

VASSAR COLLEGE, 1861
Mrs. Mary Landon Sague, Ph.D., Chairman of the Department of Chemistry

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, 1862
W. H. Adams, B.S.

KANSAS STATE COLLEGE, 1863
Edwin H. Kroeker, Ph.D.

UNIVERSITY OF DENVER, 1864
John Wesley Iliff, M.A.

SWARTHMORE COLLEGE, 1864
Edward H. Cox, Sc.D., Professor of Chemistry

CORNELL UNIVERSITY, 1865
Emmet F. Hitch, Ph.D.

WORCESTER POLYTECHNIC INSTITUTE, 1865
Edmund M. Flaherty, B.S.

LEBANON VALLEY COLLEGE, 1866
Andrew Bender, Ph.D., Head of the Department of Chemistry

COLLEGE OF WOOSTER, 1866
Russell McGill, Ph.D.

LEHIGH UNIVERSITY, 1866
Charles Wellington Simmons, M.S., Associate Professor of Chemical Engineering

DREW UNIVERSITY, 1867
Louis Cleveland Jordy, Ph.D., Professor of Chemistry

WESTERN MARYLAND COLLEGE, 1867
Samuel B. Schofield, M.A., Dean and Professor of Chemistry

MUHLENBERG COLLEGE, 1867
George H. Brandes, Ph.D., Professor of Chemistry

UNIVERSITY OF MAINE, 1868
Wilber E. Bradt, Ph. D., Head of the Department of Chemistry and Chemical Engineering

UNIVERSITY OF MINNESOTA, 1868
Miles A. Dahlen, Ph.D.

WEST VIRGINIA UNIVERSITY, 1868
Friend E. Clark, Ph.D., Head of Department of Chemistry

BOSTON UNIVERSITY, 1869
James H. Shapleigh, M.S.

PENNSYLVANIA COLLEGE FOR WOMEN, 1869
Earl K. Wallace, Ph.D., Head of the Department of Chemistry

PURDUE UNIVERSITY, 1869
John Speicher, Ch.E.

URSINUS COLLEGE, 1869
Russell D. Sturgis, Ph.D., Professor of Chemistry

UNIVERSITY OF CINCINNATI, 1870
Samuel Engle Burr, II, Ed.D.

HUNTER COLLEGE OF THE CITY OF NEW YORK, 1870
George Richard Burns, Ph.D., Assistant Professor of Cheimstry

OHIO STATE UNIVERSITY, 1870
Edwin Cole Coolidge, Ph.D.

WEST CHESTER STATE TEACHERS COLLEGE, 1871
J. Arthur Lewis, M.A., Department of Chemistry

ALABAMA POLYTECHNIC INSTITUTE, 1872
James K. Hunt, Ph.D.

VIRGINIA POLYTECHNIC INSTITUTE, 1872
J. Thompson Brown, B.S.

COLORADO COLLEGE, 1874
Mrs. James W. Leech, B.A.

ROSE POLYTECHNIC INSTITUTE, 1874
Louis S. Bake, B.S.

PARK COLLEGE, 1875
Paul Patton Faris, Litt.D.

GROVE CITY COLLEGE, 1876
Craig S. Hoyt, Ph.D., Professor of General and Physical Chemistry

JOHNS HOPKINS UNIVERSITY, 1876
Donald Hatch Andrews, Ph.D., Professor of Chemistry and Director of the Chemistry Laboratory

UNIVERSITY OF OREGON, 1876
Allen Eaton, B.A.

RADCLIFFE COLLEGE, 1879
Jeannette Elizabeth Graustein, Ph.D.

COE COLLEGE, 1881
W. G. Vannoy, Ph.D.

DRAKE UNIVERSITY, 1881
James Kirby, Ph.D.

NEWARK COLLEGE OF ENGINEERING, 1883
Paul Miller Giesy, Ph.D., Associate Professor of Chemistry

AMERICAN INTERNATIONAL COLLEGE, 1885
Robert W. Cobb, Sc.D., Director of the Department of Chemistry

BRYN MAWR COLLEGE, 1885
James Llewellyn Crenshaw, Ph.D., Professor of Chemistry

GOUCHER COLLEGE, 1885
Howard Huntley Lloyd, Ph.D., Chairman of the Department of Chemistry

WINTHROP COLLEGE, 1886
Elizabeth Breazeale, M.A.

CATHOLIC UNIVERSITY OF AMERICA, 1887
Ernest A. Valade, M.E., Dean of the School of Engineering and Architecture

CLARK UNIVERSITY, 1887
J. Sidney Gould, Ph.D.

PRATT INSTITUTE, SCHOOL OF SCIENCE AND TECHNOLOGY, 1887
Tod G. Dixon, Ph.D., Instructor in Chemical Technology

POMONA COLLEGE, 1887
Lee Cone Holt, Ph.D.

UNIVERSITY OF IDAHO, 1889
John A. Almquist, B.S.

DREXEL INSTITUTE OF TECHNOLOGY, 1891
Leon D. Stratton, Ph.D., Professor of Chemistry
Henry Ward, Ph.D., Assistant Professor of Chemical Engineering

ARMOUR INSTITUTE OF TECHNOLOGY, 1892
E. K. Bolton, Ph.D.

UNIVERSITY OF CHICAGO, 1892
Edmund Charles Humphrey, Ph.D.

AMERICAN UNIVERSITY, 1893
William Bultman Holton, Ph.D., Professor of Chemistry

HOOD COLLEGE, 1893
Elizabeth B. Bower, M.S., Professor of Chemistry

UPSALA COLLEGE, 1893
K. J. Schwing, Ph.D., Head of the Department of Chemistry

TRINITY COLLEGE, 1897
Mary H. Laffey, M.A.

CARNEGIE INSTITUTE OF TECHNOLOGY, 1900
Webster N. Jones, Ph.D., Director of the Department of Chemical Engineering

JAMES MILLIKIN UNIVERSITY, 1903
Harold B. Staley, B.A.

NEW JERSEY COLLEGE FOR WOMEN, 1918
Ira D. Garard, Ph.D., Professor of Chemistry

SARAH LAWRENCE COLLEGE, 1926
Henry K. Miller, Jr., Ph.D., Professor of Chemistry

LEARNED SOCIETIES

FRANKLIN INSTITUTE, 1824
Henry Butler Allen, Metal. Engr., Secretary and Director
N. H. Smith, Ph.D., Associate Director in charge of Chemistry

AMERICAN CHEMICAL SOCIETY, 1876
E. K. Bolton, Ph.D.
Philadelphia Section—William D. Meldrum, Ph.D.
Maryland Section—John C. Krantz, Ph.D.
South Jersey Section—H. M. Walker, Ph.D.
Delaware Section—J. M. Peterson, Ph.D.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION, 1893
Frank C. Vilbrandt, Ph.D.

NATIONAL RESEARCH COUNCIL, 1916
Herbert Raymond Moody, Ph.D., Chairman, Division of Chemistry and Chemical Technology

BARTOL RESEARCH FOUNDATION OF THE FRANKLIN INSTITUTE, 1922
W. F. G. Swann, Sc.D., Director

AMERICAN INSTITUTE OF CHEMISTS, 1923
Gilbert Seil, Ph.D.

BIOCHEMICAL RESEARCH FOUNDATION OF THE FRANKLIN INSTITUTE, 1927
Ellice McDonald, M.D., F.A.C.S., Director

AMERICAN-SCANDINAVIAN FOUNDATION, 1911
Henry Goddard Leach, LL.D., President

SWEDISH-AMERICAN TERCENTENARY ASSOCIATION
Ormond Rambo, Jr.

DELAWARE TERCENTENARY COMMISSION
Christopher L. Ward, Esq., Chairman, Executive Committee